

AMENDMENTS TO THE SPECIFICATION

Replace the paragraph beginning on page 1, line 7 with the following paragraph:

This application is a divisional application of United States Patent Application No. 09/666,745, filed September 20, 2000, and claims the benefit of United States Provisional Application No. 60/154,876, filed September 20, 1999, the disclosure of which is incorporated herein by reference.

Replace the paragraph beginning on page 4, line 29 with the following paragraph:

The illustrated continuously variable drive section 20 is a dual cavity toroidal type, including first and second outboard traction disks 21 and 22 and a single integral inboard disk 23, all of which are disposed concentrically about the input shaft 12 48. A forward toric cavity is defined between the front outboard disk 21 and the inboard disk 23, while a rearward toric cavity is defined between the inboard disk 23 and the rear outboard disk 22. First and second traction rollers 24 are disposed in each of the toric cavities. The rollers 24 are preferably disposed transversely on opposite sides of each toric cavity. Each pair of the traction rollers 24 is engaged between the associated one of the outboard disks 21 and 22 and the inboard disk 23. The rollers 24 are supported on respective trunnions 25 in such a manner as to be movable relative to the outboard disks 21 and 22 and the inboard disk 23 to initiate a change in the transmission ratio. The mechanism for effecting such relative movement of the trunnions 25 and, therefore, the rollers 24 will be described below.

Replace the paragraph beginning on page 6, line 15 with the following paragraph:

The illustrated planetary carrier 32 is formed from three components, namely, a front support member 32a, a rear support member 32b, and a central member 32c extending therebetween. The front support member 32a is disposed concentrically about and is splined for rotation with the rearwardly extending collar portion 22a of the second outboard disk 22. The rear support member 32b has a rearwardly extending, hollow cylindrical support portion 32d formed thereon that extends through an axial opening formed through the rearward internal wall 14 into the rear chamber of the housing 11 containing the output gear section 40. A plurality of bearing pins 35 (only one is illustrated) extends between and is secured to the front support member 32a and the rear support member 32b. Preferably, the bearing pins 35 are equally spaced about the planetary carrier 32 and the input shaft 12. The central member 32c of the planetary carrier 32 includes a hub portion 32e that is splined onto the input shaft 12 48 for rotation therewith.

Replace the paragraph beginning on page 8, line 15 with the following paragraph:

The rotating outboard disks 21 and 22 impinge on and rotate the traction rollers 24 in a manner that is well known and standard for toroidal type drives. The traction rollers 24 then impinge on and cause the inboard traction disk element 23 to rotate it in a negative direction. The inboard traction disk element 23 thus rotates the first sun gear 31 of the co-axial drive section 30 in a negative direction through the torque tube 26. As a result, the planetary gears 33 and 34 are rotated in a positive direction by the first sun gear 31, and the second sun gear 37 is rotated in a negative direction by rearward planetary gears 34. As a result, the Mode One sun gear 42 43 is also rotated in a negative direction.

Replace the paragraph beginning on page 10, line 18 with the following paragraph:

When the Mode Two planetary gear assembly 51 is engaged through the Mode Two clutch 56, power from the input shaft 12 is transmitted through the continuously variable drive section 20 and the co-axial drive section 30 to rotate the Mode Two sun gear 52 in a negative direction. This causes the Mode Two planet gears 54 to rotate in a positive direction, which results in the Mode Two ring gear 55 rotating in a positive direction. The Mode Two ring gear 55 directly rotates the output shaft 57 through the Mode Two clutch 56. Because the Mode Two carrier 53 is fixed to the rearward wall 14 of the housing 11, there is only one input and one output for the Mode Two planetary gear assembly 51. Thus, the Mode Two planetary gear assembly 51 also allows the CVT 10, while in its forward regime, to reach its upper operating speeds by transmitting power directly from the input shaft 12 to the output shaft 57. When the Mode Two planetary gear assembly 51 is engaged, the CVT 10 is operated in a split torque mode. Most of the torque is passed through the continuously variable drive section 20, the co-axial drive section 30, and the Mode Two planetary gear assembly 51 to the output shaft 57. A small amount of torque, however, is passed from the input shaft 12 directly to the planetary carrier 32 ~~42~~ of the co-axial drive section 30 ~~20~~, where it is summed with the other torque.

Replace the paragraph beginning on page 24, line 10 with the following paragraph:

Unlike the torque control strategy described above, the ratio control strategy is very well suited for effecting the mode shift described above. As mentioned above, the mode shift preferably occurs at or near the mode point, wherein the Mode One carrier 43 rotates at the same speed as the Mode Two ring gear 55 ~~45~~. When operated in the ratio control strategy, the CVT 10 is able to precisely control when the mode point occurs because it is focused on obtaining and maintaining the predetermined desired rotational speed for the input shaft 12. That predetermined desired rotational speed for the input shaft 12 can be precisely guided to the synchronized rotational speeds of the Mode One carrier 43 and the Mode Two ring gear 55 ~~45~~. Thus, the mode shift will always be performed at the mode point.

Replace the paragraph beginning on page 25, line 14 with the following paragraph:

However, as also discussed above, the ratio control strategy is well suited for facilitating the performance of the mode shift because of the affirmative speed control. Thus, in accordance with this invention, as the vehicle accelerates and approaches the mode point 62, a transition is made from the torque control strategy to the ratio control strategy, such as shown by the box identified as the ratio control region in Fig. 8. Preferably, the transition from the torque control strategy to the ratio control strategy is performed somewhat before the mode point is reached. This is done to allow the CVT 10 to utilize the ratio control strategy to precisely achieve the mode point, wherein the rotational speeds of the Mode One carrier 43 and the Mode Two ring gear 55 45 are synchronized. When the mode point is achieved, the mode shift is effected, and further operation of the CVT 10 continues under ratio control, as indicated by the solid line 61. Thus, it can be seen that the CVT 10 is operated in such a manner as to benefit from the advantageous aspects of both the torque and ratio control strategies, while avoiding the disadvantageous aspect of both strategies.